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REMARKS

In response to the Final Office Action mailed July 10, 2003, Applicant respectfully requests reconsideration. To further the prosecution of this application, Applicant has amended the claims and submits the following remarks.

Applicant respectfully requests entry of this Amendment, which is believed to comply with 37 C.F.R. §1.116. Admission of the amendments made herein is believed to be proper as the amendments place the application in allowable condition or at least present the rejected claims in better form for consideration on appeal. Further, the claims as amended do not raise an issue of new matter. Also, the claims as amended present no new issues requiring further consideration or further search.

I. Terminal Disclaimer

The Final Office Action objects to the Terminal Disclaimer filed on April 28, 2003, because the disclaimer was signed by Mr. Joseph Teja, Jr., who is not an attorney of record. Accordingly, a new terminal disclaimer is filed herein which is properly signed by an attorney of record.

The newly filed terminal disclaimer also addresses the issue of double patenting raised in the second numbered paragraph of the Office Action. Claims 1-29 stand rejected under the judicially created doctrine of obviousness-type double patenting. In light of the newly filed terminal disclaimer, the objection raised by the examiner is now moot. Accordingly, withdrawal of the rejection of claims 1-29 under the doctrine of double patenting is respectfully requested.

II. Objections to the Specification

In the Office Action, the Examiner objects to the specification for allegedly failing to describe the limitations of claims 2, 10, and 21. Applicant respectfully disagrees.

The Examiner argues that the limitation, "wherein the means for providing at least one time-varying compensation signal includes means for providing a different time-varying compensation signal for at least two sensors of the plurality of sensors," is not described in the specification. Applicant directs the Examiner's attention to page 2 of the specification, lines 2-7,

and lines 15-20. The language in the cited portions of the specification makes clear that there is means for providing a different time-varying compensation signal for at least two sensors of the plurality of sensors.

Furthermore, the language in claims 2, and 10 is supported by the language in the respective claims as filed, which constitute part of the original disclosure. Therefore the amendments made to these claims in the amendment mailed April 22, 2003, cannot constitute new matter.

III. Rejections Under 35 U.S.C. §102

Claims 1-5, 7, 9-13, 17, and 18 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4, 752, 694 to Hegel et al. (hereinafter Hegel). Applicant respectfully traverses this rejection.

A. Previous Rejection Over Hegel

In the non-final Office Action mailed December 24, 2002, rejection under 35 U.S.C. §102 was made, wherein the Office Action asserted that Hegel anticipated claims 1-5, 7, 9-13, 17, and 18. In the amendment mailed April 22, 2003, Applicant pointed out that Hegel did not anticipate the indicated claims. In the Final Office Action mailed July 10, 2003, the Examiner maintained the original rejection and concluded that the arguments set forth in the indicated amendment were not persuasive. The amendments to independent claims 1 and 9 have been made to clarify at least one distinction over Hegel. However, Applicant submits that even in the absence of these amendments the claims distinguish over Hegel. Accordingly new arguments to this effect are included in what follows.

B. Discussion of Hegel

Hegel is directed to an electronic array uniformity correction apparatus for use with a bolometer array (Abstract). Hegel discloses three embodiments of his invention relating to Figures 1, 4, and 5. As shown in Figures 1, 4, and 5, a bolometer array 10 includes a number of resistive sensors, wherein each sensor is connected to a blocking diode (col. 1, lines 66-67). Hegel further discloses that a two-dimensional bolometer array generally is made up of a number

of resistive thermal detectors whose electrical resistance changes as a function of temperature (col. 1, lines 27-31).

Referring to the embodiment of Figure 1, the sensors of the bolometer array 10 are connected between the points A and B via a number of FETs 14, 15, 16, 44, 45, and 46, by closing selected contacts of switches 60 and 61 (col. 2, lines 1-3). A similar configuration is shown in Figures 4 and 5. In the operation of all the disclosed embodiments, a radiation image 75 is incident upon the sensor array 10 (col. 3, lines 43-47; Figures 1, 4, and 5). The output of the sensors is read out in to the readout circuit in a sequential order controlled by the sequencer 62 (col. 3, lines 36-39; col. 2, lines 31-35; Figures 1, 4, and 5).

As indicated in Figure 3, the resistance of the sensors may not be uniform within the entire array 10, and thus a correction signal must be applied to correct for the non-uniformity (col. 3, lines 11-52). In a first embodiment, Hegel discloses that by providing a constant bias offset signal directly to each sensor of the bolometer array 10 (i.e., before the preamplifier and readout circuit 51), the array uniformity connection circuit of Fig. 1 facilitates the use of a preamplifier that does not have to accommodate a large dynamic range for input signals to the preamplifier (col. 3, lines 55-64; col. 4, lines 11-14 and lines 35-37, and lines 58-60). Alternatively, in Figs. 4 and 5 respectively, Hegel discloses two other embodiments of an array uniformity correction circuit which each provides offset correction at the output of a preamplifier 51' (which amplifies sensor output signals at the point B). In any case, with respect to the embodiments disclosed in each of Figs. 1, 4, and 5, it is noteworthy that nowhere in the reference does Hegel disclose or suggest that any signals generated and applied to provide offset correction to respective sensors of the array 10 are time-varying signals; specifically the teachings of Hegel are limited only to *constant non-time-varying bias signals* that are applied either directly to the sensors themselves (Fig. 1) or at the output of a preamplifier that amplifies signals generated by the sensors (Figs. 4 and 5).

C. Claims 1-5, 7, 9-13, 17, and 18 Patentably Distinguish Over Hegel

As amended, claim 1 recites an apparatus comprising a first sensor of an array of sensors to detect radiation and to output a first image signal based on the radiation detected by the first sensor. The apparatus further comprises offset correction circuitry to compensate errors in at

least the first image signal and to output at least a corrected first image signal, wherein the offset correction circuitry includes means for providing at least one time-varying compensation signal that is added to the first image signal to generate the corrected first image signal. Thus, it is clear that the time-varying compensation signal is added to the first image signal of the first sensor, to generate the corrected first image signal.

The Office Action states on page 4 that Hegel allegedly discloses such a feature in column 4, lines 10-37. Applicant respectfully disagrees. This passage of Hegel cited by the Office Action merely discloses that bias signals which are generated for non-uniformity correction are derived by retrieving from memory a single digital value for each sensor that is converted to an analog signal via a digital-to-analog converter and applied either directly to a given sensor via an FET, or to sensor output circuitry (a preamplifier). It is noteworthy that Hegel states only that a different number representing a constant bias value for each sensor in the array is stored in a corresponding memory location and recalled from memory when the sensor is activated (col. 3, lines 2-5).

The Office Action also asserts that Hegel discloses at least a first sensor to detect radiation and to output a first image signal 75. Applicant directs the examiner's attention to Figures 1, 4, and 5, in which it is obvious that 75 is not an outputted image signal but rather the detected radiation incident upon the bolometer array (col. 3, lines 43-47).

Continuing, on pages 6 and 7, the Office Action asserts that the compensation signal of Hegel varies depending on the on/off status of switched 101-116, which varies with time. While Applicant agrees that the compensation signal varies depending on the on/off status of the switches, Applicant respectfully disagrees that Hegel discloses that the on/off status of the switches varies with time for a single sensor of the array. In particular, it is shown in the specification that the sensors of Hegel are activated sequentially (column 3, lines 36-39). Thus, since the on/off status of the switches is controlled so as to provide the correct offset for each individual sensor (col. 4, lines 33-35), and since the sensors are sequentially activated (col. 3, lines 36-39), Applicant asserts that the on/off status of the switches may vary as the individual sensors are sequentially activated. There is no disclosure, however, of providing an individual sensor with a time-varying compensation signal.

Further, page 7 of the Office Action asserts that the signal 69 in Figure 5 of Hegel is non-constant, and that this signal could be referred to as the compensation signal. Applicant respectfully disagrees. Claim 1 makes clear that the time-varying compensation signal is added to the first image signal. In contrast, signal 69 of Hegel is not added to an image signal, but rather is converted into signal 85. As presented above, Hegel does not disclose that signal 85 from offset correction circuit 81'' is time-varying when applied to a single sensor.

In light of the above arguments, it is clear that Hegel does not anticipate claim 1, and withdrawal of the rejection of claim 1 under 35 U.S.C. §102 is respectfully requested.

Claims 2-5 and 7 depend from claim 1 and are allowable for at least the same reasons.

Claim 9, as amended, recites a method for compensating errors in a first image signal generated by a first sensor of an array of sensors in response to radiation detected by the first sensor. The method comprises a step of adding a time-varying compensation signal to the first image signal. As discussed above, in connection with claim 1, Hegel does not disclose adding a time-varying signal to the first image signal. Accordingly, withdrawal of the rejection of claim 9 under 35 U.S.C. §102 is respectfully requested.

Claims 10-13, 17, and 18 depend from claim 9 and are allowable for at least the same reasons.

CONCLUSION

In view of the foregoing amendments and remarks, this application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this amendment, that the application is not in condition for allowance, the Examiner is requested to call the Applicant's attorney at the telephone number listed below to discuss any outstanding issues relating to the allowability of the application.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

Respectfully submitted,

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